Atoms for Peace


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Idaho National Engineering and Environmental Laboratory

INEEL

Home of Science and Engineering Solutions

A Center of Peaceful Nuclear Technology Development

The Idaho National Engineering and Environmental Laboratory: A Pioneer of Peaceful Nuclear Technology

The National Reactor Testing Station – today's Idaho National Engineering and Environmental Laboratory (INEEL) – was established in 1949 on the site of a former naval gunnery range in the high desert east of Idaho Falls. The facility's mission from the very beginning was to research and develop peaceful nuclear energy. INEEL was once the site of the world's largest concentration of nuclear reactors. Fifty-two test reactors – most of them first of a kind – were designed and built at the site. Three are still operating today.

The U.S. nuclear power industry and the nuclear Navy each had their genesis at INEEL. The prototype nuclear propulsion plant for the USS Nautilus, the first U.S. nuclear submarine, was developed at INEEL, and for years, many of the naval personnel who went on to command and operate nuclear

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The Idaho National Engineering and Environmental Laboratory is a science-based, applied engineering national laboratory dedicated to supporting the U.S. Department of Energy's missions in energy security, national security, environment and science.

For More Information

Teri Ehresman
208-526-7785
ehr@inel.gov

www.inel.gov

The INEEL is a U.S. Department of Energy national laboratory operated by Bechtel BWXT Idaho, LLC.

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submarines and surface ships trained at the site.

In 1951, INEEL achieved one of the most significant scientific accomplishments of the 20th century. The site's Experimental Breeder Reactor No. 1 produced the world's first usable quantity of electricity generated using nuclear fission – enough to light the reactor building itself.

The site achieved another milestone in 1955 when its Borax-III reactor became the first nuclear reactor to power a U.S. town: Arco, Idaho, population 1,350.

Since the inception of peaceful nuclear energy, INEEL has been at the forefront of nuclear safety. Beginning in 1952, the Materials Testing Reactor tested materials' performance in intense radiation environments. Research conducted at the MTR influenced the design of every U.S. reactor. INEEL also pioneered what have become the international standards for nuclear operating and safety procedures.

Advancing Today's Applications of the "Peaceful Atom"

INEEL is supporting peaceful uses of nuclear technology in a number of program areas:

- Energy – INEEL is at the forefront of new nuclear reactor design and development. In 2002, U.S. Secretary of Energy Spencer Abraham declared that "INEEL will be the epicenter of our efforts to expand nuclear energy as a reliable, affordable and clean energy source for our nation's future."
- Environmental Management – INEEL helps manage spent nuclear fuel and radioactive waste, and develops new technologies and processes to make storing these materials safer.
- Nonproliferation and National Security – INEEL researches, develops and deploys technologies to improve homeland security, detect weapons of mass destruction and advance nuclear nonproliferation.
- Science – INEEL conducts research and development in nuclear and radiological sciences, and produces important medical, research and industrial isotopes at its Advanced Test Reactor.

Opening the Way for Tomorrow's Peaceful Nuclear Technologies

INEEL is leading development in the U.S. of the next generation of nuclear energy systems. This "Generation IV" reactor will provide electricity and allow large-scale, emissions-free production of hydrogen for tomorrow's automobiles. INEEL is currently conducting research on several nuclear energy systems as part of an international effort to see which best meets Generation IV's stringent sustainability, economic, safety, reliability and nonproliferation goals.